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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/724,200	11/27/2000	Tadayuki Ishida	41211/DBP/K277	7882

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 09/05/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/724,200

Applicant(s)

TADAYUKI ISHIDA ET AL.

Examiner

Abbas I Abdulsalam

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-4, 6-10, 12-14 and 16-26 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

- 6) ☒ Claim(s) 2-4, 6-10, 12-14 and 16-26 is/are rejected.

- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4, 6-10, 12-14, 16-21 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura et al. (USPN 5308917).

Regarding claims 2, 6, 12 and 16, Kitamura teaches a touch responsive setting apparatus including a keyboard (10) generating touch data (p), and a curve memory (40) storing curve data values with their corresponding velocity values. Kitamura teaches generation of touch curves with respect to various degrees of the strength of depressions. Furthermore, Kitamura teaches an interpolator (30) which interpolates the input touch data and form a response curve representing touch-tone level character. See col. 3, lines 1-12, col.5, lines 51-56, Fig 2, Fig (8-10). In addition, Kitamura teaches the process for regenerating a touch curve data under various touch setting points and calculation of the corresponding velocities. See col. 5, lines 15-43 and lines 50-65. . Kitamura does not specifically teach “a correction coefficient generator which generates a correction coefficient composed of a ratio of one of the velocity values corresponding to one of touch data generated by keyboard under predetermined operation mode to a maximum value of velocity values”. Furthermore, Kitamura teaches the panel switches (11) having a curve setting section (11a), which has various switches (SW) such as mode switches fro selecting the desired

Art Unit: 2674

mode. See col. 3, lines 60-68, col. 4, lines 1-4 and Fig. 4. However, Kitamura teaches determination of velocity data value VELO (LOOCNT) by interpolation in various ways (S52, S54, S56, S57 as shown in Fig. 11). Kitamura also teaches the determination of the maximum velocity value, Vmax of the touch curve as shown in col. 5, lines 35-43.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Kitamura's velocity, VELO and maximum velocity, Vmax for the purpose of touch curve data regeneration. One would have been motivated in view of Kitamura that simply dividing the velocity, VELO by the maximum velocity, Vmax is mathematically and functionally equivalent to the desired correction coefficient.

Regarding claims 6 and 16, in addition to what has been described above, Kitamura teaches a curve memory for storing conversion curve data defined by polygonal line, and an interpolation means which takes into account average value data, a predetermined tone level and certain calculation the result of which is a calculated correspondence as the conversion data in the curve memory. It would have been obvious that the interpolation means equivalently provides the desired scenario of correction value becoming the predetermined value. See col. 52-55, 65-68 and col. 2, lines 1-5.

Regarding claims 3, 13 and 17, Kitamura teaches the use of storage (S26) as well as a processing for generating touch curve data including determination of velocities by interpolation (S52, S54, S56, S57) under various scenarios. See Fig 6 & 11.

Regarding claims 4, 7-8, 10, 14, 18 and 20, Kitamura teaches key depressions and the strength associated with depressions at average, lower than average and higher average values. See Fig (8-10).

Regarding claims 9 and 19, Kitamura teaches the use of storage (S26) as well as a new touch curve data, VELO, which is generated on the basis of average data touch. See col. 4, lines 45-49, Fig. 6 and Fig. 11.

Regarding claim 21, Kitamura teaches an electronic musical instrument where a response of the tone generation volume corresponds to the touch level of the keyboard (col. 1, lines col. 11-16), and discloses a tone generator (12), which includes, among others duration based on the tone control signal. See Fig. 3 and col. 3, lines 51-59. It would have been obvious that the tone generator (12) with associated responses as configured in Fig. 3 perform the desired functions of the sensors.

Regarding claims 23-25, Fujiwara teaches an interpolation formula (4) used in equation (4) where  $V_{max}$  and  $ff$  are respectively the maximum velocity value of the curve and the maximum value of the data. See Fig. 5 (S7). See col. 5, lines 32-43.

2. Claims 22 and 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura in view of Fujiwara et al. (USPN 6075196).

Regarding claims 22 and 26, Kitamura has been discussed above. However, Kitamura does not the use of correction curve with respect to a "single keying power". Fujiwara on the other hand teaches a relationship between a key velocity and a string-striking velocity such that white points represents results of relationship between the key velocity and the string-striking velocity with respect to a single-hit performance technique. See Fig. 5 and col. 9, lines 35-42.

Art Unit: 2674

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Kitamura's musical keyboard instrument to adapt Fujiwara's single-hit performance. One would have been motivated in view of the suggestion in Fujiwara that the single hit performance technique as represented in Fig. 5 is equivalent to the desired "single keying power". The use of a single hit performance technique helps function an electronic musical instrument more effectively as taught by Fujiwara.

### **Conclusion**

3. The prior art made of record and not relied upon is considered to applicant's disclosure.

The following arts are cited for further reference.

U.S. Pat. No. 5,792,971 to Timis et al.

U.S. Pat. NO. 5,350,880 to Sato

Art Unit: 2674

4. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

**Any response to this action should be mailed to:**

Commissioner of patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314**

Hand delivered responses should be brought to Crystal Park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.



**RICHARD HJERPE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**

**Abbas Abdulsalam**

**Examiner**

**Art Unit 2674**